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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,313	05/16/2007	James W. Cree	TRED54 (345 US)	3997

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EXAMINER	
VONCH, JEFFREY A	
ART UNIT	PAPER NUMBER
4132	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,313	CREE ET AL.	
	Examiner	Art Unit	
	Jeff A. Vonch	4132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8 June 2006 (Prelim. Amend.)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,7,10-14,16,18,21-23,26-28,30-32 and 34* is/are pending in the application.

4a) Of the above claim(s) *1-3,7,10-14,16,18,27 and 28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-23,26,30-32 and 34* is/are rejected.

7)☒ Claim(s) *31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20080721, 20071107*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

2. This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

3. In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-3, 7, 10-14, 16, 18, & 27-28, drawn to a method of constructing a composite bilayer material.

Group II, claim(s) 21-23, 26, 30-32, & 34, drawn to a composite bilayer material.

4. The inventions listed as Groups I & II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

5. The composite comprising: a first layer having a first surface energy and a second layer, containing apertures and having a second surface energy, wherein the said second surface energy is greater than the first surface energy and said composite has a unified structure that contains a differential surface energy gradient between the first and second layers is the common technical feature.

6. The common technical feature has already been taught in Shimizu (U.S. Patent No. 6,274,218 B1) (hereinafter "Shimizu") as evidenced by Duncan (U.S. Patent No. 3,592,194) (hereinafter "Duncan"). Duncan teaches that the terms hydrophobic and hydrophilic refer, respectively, to relatively low and relatively high critical surface tensions (col. 1, lines 18-22).

7. Shimizu teaches a unified (col. 1, lines 59-62) structure (Fig. 2) comprising a hydrophobic (col. 2, lines 2-3) nonwoven (col. 2, line 67 - col. 3, lines 1-4) fibrous first layer (Fig. 2 **11**) and a hydrophilic (col. 2, lines 2-3) thermoplastic (col. 3, lines 8-10) fibrous second layer (Fig. 2 **12**). The second sheet is more hydrophilic than the first (col. 3, lines 16-18). Each of these would inherently have different surface energies with the first being greater than the second according to Duncan. The second (and first) layer has apertures (Fig. 2 **6**) designed so that liquid placed on the first layer would penetrate into the second layer and into the absorbent core (col. 3, lines 30-52).

8. The common technical feature is already available in the prior art, and therefore a lack of unity has been established.

9. During a telephone conversation with Joseph Tessari on Tuesday, May 12th, 2009 a provisional election was made without traverse to prosecute the invention of Group II, claims 21-23, 26, 30-32, & 34. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-3, 7, 10-14, 16, 18, & 27-28 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

10. Claim 31 is objected to because of the following informalities: the amendment to claim 31 appears to be improperly drafted. The claim reads "An absorbent article comprising said composite of claim 30. is an intermediate layer." The language following the first period is not a proper sentence. If the language is intended to be

there, claim 32, dependent on claim 31, would require an objection for being not properly further limiting. The limitation of an intermediate layer being expanded to an intermediate layer or a topsheet broadens the scope which is improper for a dependent claim. Because of this, claim 31 will be examined as reading "An absorbent article comprising said composite of claim 30." Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

12. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 21-23, 26, 30-32, & 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14. Regarding Claims 21 and 22, it is unclear what is meant by the references to surface energy and liquid drop. Whether the claimed surface energy relationship is satisfied for a particular claimed article and whether a liquid drop behaves as claimed are determined by specifying a liquid material in addition to the claimed article and its material. Where no liquid drop material is specified, it is unclear how one of ordinary skill in the art can ascertain whether the claimed surface energy and liquid drop performance requirements are satisfied. An analogous rejection applies to Claim 30.

15. Regarding Claim 30, it is unclear what is meant by the phrase "can be prepared." It is unclear whether this language is permissive or whether it requires that the claimed article be formed by performing the method of Claim 10.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 21-22, 30-32, & 34 rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu (U.S. Patent No. 6,274,218 B1) (hereinafter "Shimizu") as evidenced by Duncan (U.S. Patent No. 3,592,194) (hereinafter "Duncan").

18. With respect to claim 21, Shimizu teaches a unified (melt adhesive bonded) structure (col. 1, lines 59-62 and Fig. 2) comprising:

> a first layer with a first surface energy "hydrophobic" (col. 2, lines 2-3) and having at least one recess (Fig. 2 **11** & **6**);
>
> a second layer with a second surface energy "hydrophilic" (col. 2, lines 2-3) which is greater than said first surface energy (col. 3, lines 16-18);
>
> wherein the difference between said first surface energy and said second surface energy is sufficient such that a liquid places atop said first layer at least partially penetrates said recess in said first layer to said second layer (col. 3, lines 30-52).

19. Duncan teaches that the terms hydrophobic and hydrophilic refer, respectively, to relatively low and relatively high critical surface tensions (col. 1, lines 18-22). Surface tension is synonymous with surface energy, meaning low surface tension corresponds to low surface energy and high surface tension corresponds to high surface energy. Each of the layers as labeled (hydrophobic and hydrophilic, respectively) would inherently have different surface energies, with the first being greater than the second according to Duncan.

20. With respect to claim 22, Shimizu teaches that the second layer (Fig. 2 **12**) has apertures (Fig. 2 **6**). Shimizu also teaches that the difference between said first surface energy and said second surface energy is sufficient such to at least partially drives said liquid through one of said apertures of said second layer (col. 3, lines 45-48).

21. With respect to claims 23, 24, and 30, Shimizu teaches a unified structure (Fig. 2) comprising a hydrophobic (col. 2, lines 2-3) nonwoven (col. 2, line 67 - col. 3, lines 1-4) fibrous first layer (Fig. 2 **11**) and a hydrophilic (col. 2, lines 2-3) thermoplastic (col. 3, lines 8-10) fibrous second layer (Fig. 2 **12**). The second sheet is more hydrophilic than the first (col. 3, lines 16-18). Each of these would inherently have different surface energies with the first being greater than the second according to Duncan causing a differential gradient. The second (and first) layer has apertures (Fig. 2 **6**) and it is exposed as the holes (Fig. 2 **6**) in the first layer (Fig. 2 **11**) are wider than the holes in the second layer (Fig. 2 **12**). Both of the layers are bonded (col. 1, lines 59-62) to form an activated composite.

22. With respect to claims 31, 32, and 34, Shimizu teaches his material as a topsheet to an absorbent article such as a disposable diaper, an incontinent pad, training pants, a sanitary napkin and the like (col. 1, lines 6-9).

23. Claims 21-23, 26, 30-32, & 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al. (U.S. Patent No. 5,990,377) (hereinafter "Chen") as evidenced by Duncan (U.S. Patent No. 3,592,194) (hereinafter "Duncan").

24. With respect to claim 21, Chen teaches a unified structure, a basesheet, (col. 39, lines 19-25 and Fig. 5 + Fig. 14) comprising:

a first layer with a first surface energy "hydrophobic" (col. 27, lines 14-26 & col. 39, lines 62-63, Fig. 14 **60**) and having at least one recess (Fig. 14 **61**);

a second layer with a second surface energy "hydrophilic" (col. 27, lines 45-50) which is greater than said first surface energy "more hydrophilic than hydrophobic" (abstract);

wherein the difference between said first surface energy and said second surface energy is sufficient such that a liquid places atop said first layer at least partially penetrates said recess in said first layer to said second layer (col. 27, lines 16-23).

25. Duncan teaches that the terms hydrophobic and hydrophilic refer, respectively, to relatively low and relatively high critical surface tensions (col. 1, lines 18-22). Surface tension is synonymous with surface energy, meaning low surface tension corresponds to low surface energy and high surface tension corresponds to high surface energy. Each of the layers as labeled (hydrophobic and hydrophilic, respectively) would inherently have different surface energies, with the first being greater than the second according to Duncan.

26. With respect to claim 22, Chen teaches that the basesheet (Fig. 5 **1**) has apertures (Fig. 5 **27**). Shimizu also teaches that the difference between said first surface energy and said second surface energy is sufficient such to at least partially drives said liquid through one of said apertures of said second layer (col. 2, lines 54-59 & col. 31, lines 65-66).

27. With respect to claims 23, 24, and 30, Chen teaches a unified structure (col. 39, lines 19-25 and Fig. 5 + Fig. 14) comprising a hydrophobic nonwoven fibrous first layer (col. 27, lines 14-26 & col. 39, lines 62-63, Fig. 14 **60**) and a hydrophilic basesheet (col. 27, lines 45-50). The second sheet is more hydrophilic than the first (col. 27, lines 16-

23). Each of these would inherently have different surface energies with the first being greater than the second according to Duncan causing a differential gradient. The second (and first) layer has apertures (Fig. 5 **1**) and it is exposed (col. 40, lines 48-52) because of the holes (Fig. 14 **61**) in the first layer (Fig. 14 **60**). Both of the layers are bonded (col. 39, lines 45-52) to form an activated composite.

28. With respect to claims 31, 32, and 34, Shimizu teaches his material as a topsheet (col. 2, lines 19-21) to an absorbent article such as a disposable diaper, an incontinence pad, training pants, a sanitary napkin and the like (col. 1, lines 8-14).

Conclusion

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff A. Vonch whose telephone number is (571) 270-1134. The examiner can normally be reached on Monday to Thursday 7:30-5:00 EST.

30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael LaVilla can be reached on (571) 272-1539. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

31. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. A. V./
Jeff A. Vonch
Patent Examiner, Art Unit 4132
May 12th, 2009

/Michael La Villa/
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18 May 2009